

## ABSTRACT

5 A system of increasing overall fuel efficiency of a facility including a gas expansion engine for receiving a supply of pressurized gas of a first pressure and first temperature and outputting a tail gas of a second lower temperature and lower pressure. The expansion engine having a rotatable shaft as an energy output. An electric generator and/or other rotatable machinery is coupled to the rotatable shaft of the gas expansion engine. A heat exchanger may be used to transmit coldness from the tail gas of the expansion engine to an HVAC apparatus or an ice making apparatus or other plant process cooling equipment.

10 A method of increasing overall fuel efficiency for a facility utilizing the afore described equipment is taught in the present invention.